Cambodia Health System Review:

The current policies and strategies of the health system's governance, financing, and service delivery

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List of Abbreviations

AOP	Annual Operations Plan
CBHI	Community Based Health Insurance
CPA	Complementary Packages of Activities
DSF	Demand-side financing
HC	Health Centre
HEF	Health Equity Fund
HSP2	Cambodia's Health Strategic Plan 2008-2015
HSSP	Cambodia's Health Strategic Plan 2003-2008
MoH	Ministry of Health, Cambodia
MDGs	Millennium Development Goals
MPA	Minimum Packages of Activities
NAA	National AIDS Authority
NGO	Non-governmental Organization
NH	National Hospital
OD	Operational District
PHD	Provincial Health Department
PH	Provincial Hospital
RH	Referral Hospital
SEDP2	Cambodia Socio-Economic Development Plan II 2002
SDG	Service Delivery Grant
SOA	Special Operating Area

Introduction

Cambodia's health system is in a period of transition as policy innovation and reform began in 1996. Importantly, the Ministry of Health (MoH) and donor agencies have undergone a series of policy shifts in an attempt to strengthen the health system in order to provide equitable access to health care for the population. This paper will describe the health system's governance, financing and service delivery functions in regards to their current situation and recent innovations that aim to improve equitable access to services for the population.

Health systems can be understood as encompassing the supply of services to the target population based on six functions: 1) service delivery; 2) governance; 3) financing; 4) pharmaceutical management; 5) information systems; and 6) human resources (Gilson, 2012). Included within these functions are curative and preventative services through a wide range of channels of delivery and a complex mixture of service providers. Moreover, the study of health systems is multidisciplinary, encompassing the fields of "economics, sociology, anthropology, political science, public health and epidemiology" (Gilson, 2012, p. 21). Therefore, undertaking a review of the Cambodian health system will incorporate knowledge generated through a variety of disciplines and approaches.

Despite these classifications, literature on the Cambodian health system is not well-defined in such boxes. Studies, interventions, and innovations that have been underway are multifaceted as the challenges faced by the Cambodian health system are complex and interdisciplinary (Gilson, 2012). For example, innovations in health financing have significant impacts on governance and issues faced in service delivery have been tackled though governance and financing interventions. Multidimensional strategies are required for the MoH to achieve its goal of meeting Cambodia's essential health needs by "improving the population's confidence in

public health services, clarifying and reinforcing the role of hospitals and health centers, establishing each facility's catchment area to ensure coverage of this population, [and] rationalizing the allocation and use of resources" (Char, 2008, p. 6). Doing so requires an understanding of the relationships and synergies between different aspects of the system as a whole.

The paper will conclude with a description of the gaps in research of the three health system functions that inhibit a more thorough review. It is suggested that Cambodia must address the gaps in research explored through this paper to create the knowledge base required to scale up current programs or create new approaches to health governance, finance, and service delivery. Such an approach will allow Cambodia to more effectively continue and strengthen the vast improvements that have occurred since it began its health system innovations less than two decades ago.

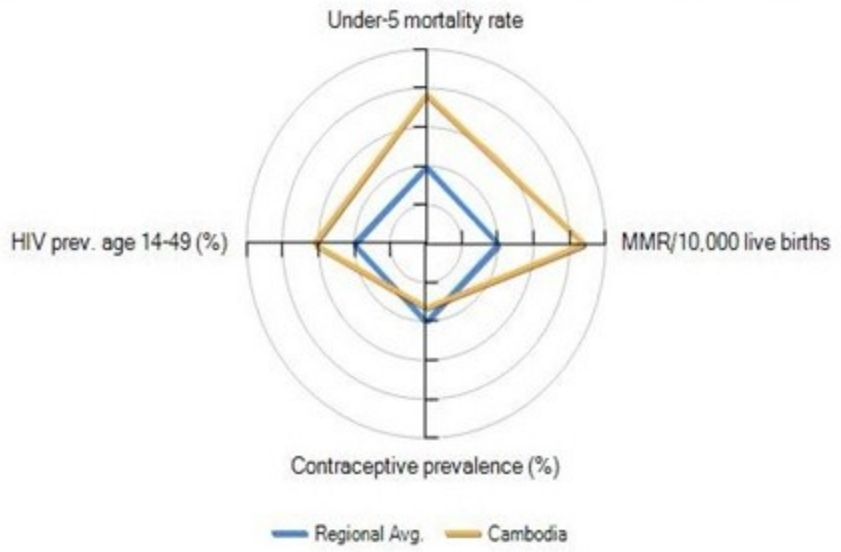
Background

The population of Cambodia is 14,952,665 (July 2012 est.) with roughly 80% of the population living in rural areas (Central Intelligence Agency, 2013). The economy is expanding rapidly with an estimated real GDP growth at 7.1% (2011 est.), yet income disparities are widening and poverty remains widespread. Approximately 31% of the population lives below the poverty line (Central Intelligence Agency, 2013). The bulk of the development is occurring in the urban economy and disparities are growing in the distribution of income (Annear, 2009). Moreover, Cambodia's total health expenditure is low at 5.9% of GDP (2009), ranking it 121 out of 192 countries. Currently Cambodia has 0.23 physicians per 10,000 of the population, ranking 148 out of 192 countries. The current life-expectancy of Cambodia is 62.67 years (60.31 for men

and 65.13 for women), ranking as 177 out of 192 countries (Central Intelligence Agency, 2013). As a result of the low number of physicians per capita and the highly rural population, the people of Cambodia face further barriers to health services due to both infrastructural and geographical barriers. As seen in Figure 1, Cambodia's health indicators are largely superior to other low-income countries, but still lag significantly behind its neighbours in the South East Asia region (Health Systems 20/20, 2012). Ensuring widespread access by creating an equitable health system is hindered by these ongoing challenges.

In relation to the targets of the Millennium Development Goals (MDGs), Cambodia is either on track may potentially reach the targets if changes are made to the health system. Firstly, Cambodia has already halted the spread of HIV/AIDS, achieving target 6 of the MDGs with a current prevalence rate of ages 15-49 of 0.5% (UNAIDS, 2011; MDG Monitor, 2012). Cambodia is also on target to reduce the under-five and infant mortality (IMR) rates by two-thirds by 2015 (MDG Monitor, 2012). Cambodia's IMR is currently 42.9 per 1000 live-births and its under-five mortality rate is 51.0 per 1000 births (World Bank Databank, 2012). Moreover, it is possible to achieve MDG goal 5 of improving the maternal health targets by reducing the maternal mortality ratio by three quarters if some changes are made, such as increased utilization of skilled birth attendants in rural areas (MDG Monitor, 2012).

Figure 1: Millennium Development Goals health-related indicators in Cambodia (Source: http://healthsystems2020.healthsystemsdatabase.org/reports/Reports.aspx)



According to the most recent government report on the achievement of Cambodia's Millennium Development Goals (MDGs), "Cambodia has seen tremendous progress in the normalization of life, rapid economic growth, and integration into the regional and global communities" (Ministry of Planning, 2010, pg. 3). The greatest progress has been seen in MDG4, child mortality, as well as MDG6, HIV/AIDS and malaria, dengue fever and tuberculosis (UNICEF, 2009). Cambodia's achievements in combating child mortality have been through an indirect approach, based on addressing the healthcare needs of impoverished people as a whole (Overseas Development Institute, 2009). This approach is a central component of 2002's Cambodia Socio-Economic Development Plan II (SEDP II), as well as the 2003 Health Sector Strategic Plan (HSSP), two OECD-supported initiatives. The plan involves 7 core components, including improving access to, and quality of, public sector health care. It was also

recognized that the attitudes of health care providers towards impoverished health care recipients needs to be improved.

Improved HIV/AIDS health indicators have been achieved through the National Strategic Plan, coordinated by the National Aids Authority (NAA) (Overseas Development Institute, 2010). Overall HIV prevalence has been reduced from 1.2% in 2003, to an estimated 0.5% in 2011 (Ministry of Planning, 2010; UNAIDS, 2011). The Ministry of Planning (2010) credits condom promotion campaigns in the country's brothels for much of this large decrease. Of those with advanced HIV, 94% are receiving antiretroviral combination therapy. There are still gains to be made however, as spousal infection of married women now make up the highest proportion of new cases, while mother to child transmissions are also increasing. Gains have also been made in tuberculosis and dengue fever; however, treatment-resistant strains of malaria are a source of increasing concern. The Cambodian health system is therefore improving in its responses to communicable diseases; however, much more needs to be done.

Projections are less positive for health MDG5, improving maternal health. Maternal mortality figures are also discouraging, as the current maternal mortality ratio of 461 deaths per 100,000 live births is the highest in the region and virtually unchanged since 1997 (UNDP, 2011). The Cambodia's Health Strategic Plan 2008-2015 (HSP2) indicates that achieving MDG5 requires multisectoral collaboration and it is influenced by "women's education and literacy levels, infrastructure development, and levels of women's participation and gender equity" (Char, 2008, p. 11). Importantly, maternal mortality is considered a generic indicator of health system performance, and as such it has gained significant political will to address its underlying causes. Proven interventions and pilots are underway to decrease maternal mortality rates in Cambodia but the underlying issue that remains is the utilization of these services (Char, 2008).

Cambodia is currently facing a double burden of disease as it undergoes the epidemiological transition. As seen in Table 1, the burden of disease from non-communicable diseases is increasing, despite Cambodia's continued heavy burden from communicable diseases. Cambodia's significant recent economic growth has therefore been coupled with increased investment in health. As a result, Cambodia has begun to decrease the burden of communicable diseases, yet the burdens from non-communicable diseases are increasing. The Royal Government of Cambodia must therefore continue to focus on decreasing Category I illnesses, yet future health plans must account for the rising rates of Category II illnesses, in line with Cambodia's epidemiological and demographic shifts. Additionally, Cambodia's HSP2 has targeted specific causes of morbidity and mortality to count as performance indicators, many of which are in line with the MDGs (Char, 2008). Cambodia will therefore continue to focus primarily on Category I diseases.

Table 1: Disease burden in Cambodia by major category (WHO, 2013)

Major Disease Category	**Age-standardized DALY rates 2002 (per 100,000)**	**Age-standardized DALY rates 2004 (per 100,000)**
I. Communicable, maternal, perinatal and nutritional conditions	18,530	18,213
II. Non-communicable diseases	14,179	16,020
III. Injuries	2,370	2,487
All Causes	35,079	36,720

Since the Paris Peace Accords in 1991 and general elections in 1993, Cambodia has been able to develop its national health system with, at the time, very little external support. Resulting from Cambodia's recent history of civil war and instability, it has only been since this time that the national situation has begun to normalize. Development, however, has continued, and Cambodia has made significant progress in its health system and the health status of Cambodians

is clearly improving. Such improvements have been a result of rising incomes, reduced costs of health services, and an increase in spending on health (Lane, 2007). As a result, enormous capital, both human and economic, has been required to improve health indicators in Cambodia. However, the recent results have been generally positive.

Importantly, the MoH still faces significant challenges and much remains to be done. Key areas of concern are: 1) lower aggregate health indicators than neighbouring countries, despite higher per capita health spending; 2) low public service wages creating a situation of low service delivery in the public health services; 3) a continued shortage of key medical personnel; 4) financial barriers remain for significant proportions of the population; 5) significant lack of accountability within the financing of the health system, posing major challenges to the planning of efficient resource allocation; and 6) external aid remains fragmented and is not always in line with national health priorities (Lane, 2007). The remarkable reconstruction of the health system, therefore, remains an ongoing process if it is to effectively tackle the MoH's value-based commitments of equity and the right to health for all Cambodians (Char, 2008).

Cambodia's Health Strategic Plan 2008-2015 pays significant focus on methods to achieve the MDGs through "five working principles: 1) social health protection, especially for the poor and vulnerable groups; 2) client focused approach to health service delivery; 3) integrated approach to high quality health service delivery and public health interventions; 4) human resources management as the cornerstone for the health system; and 5) good governance and accountability" (Char, 2008, p. x). The HSP2 argues that these principles require a clear policy direction, primarily involving decentralization, scaling up of services, improved quality and accessibility of services, and increasing overall investment. The MDGs are used as a time-bound milestone with the described policy directions targeting both the supply and demand side

of health services. Importantly, as the MDGs are driving health planning, Cambodia is shown to have clear external policy influences from the international community. The HSP2 provides policy directions for health service delivery, health care financing, human resources for health, health information systems, and health system governance, with a focus on sustainable development and local ownership (Char, 2008). The plan provides a framework of current and future policy directions of the MoH in the near future. The MDG targets therefore provide the foundation for policy throughout all functions of the health system and the HSP2 acknowledges that multisectoral innovation is required to achieve them.

Grundy *et al*. (2009), however, describe the policy transitions of the MoH in the context of Cambodia's social and economic development since the Paris Peace Accords in 1991 through assessing their effectiveness in light of Cambodia's social, epidemiological, and demographic health trends. The authors focus on health systems strengthening in light of the current policies and practices put forward by the MoH. Importantly, Cambodia has made significant strides in the health system through innovations in health contracting, health financing, and health planning. Importantly, however, it was found that socio-economic factors were still significant in determining access to facility based health care, primarily resulting from associations of health service utilization with geographic location, education levels, and access to facilities. The authors conclude that despite the internationally recognized health policy flexibility and innovation, it is currently insufficient in the face of Cambodia's rapid social and economic change. Furthermore, new policy making tactics are required to minimize the delays between social transition and the response of the health system, particularly in light of Cambodia's rapid urbanization and industrialization. The lower socio-economic quintiles and remote area residents are particularly prone to marginalization from the health system and policy shifts have so far

been insufficient in their responses. Policy development in Cambodia must anticipate future epidemiological shifts through a prospective social and economic analysis of Cambodia development.

Importantly, global health actors' health system strengthening initiatives must be in accordance with capacity building and the priorities of the Cambodian MoH. Without such efforts, the sustainability of Cambodia's health system will remain questionable. There often, however, remains a gap between the rhetoric and action of global health actors' within their health systems strengthening interventions (Marchal, Cavalli & Kegels, 2009). Rather than viewing the health system holistically, donors may focus on disease specific interventions that are in accordance with their own programming despite identifying weak health systems as the major barrier to their success. Marchal, Cavalli and Kegels (2009) argue that donors must have a long-term focus on their health systems strengthening efforts that is in accordance with local context. All in all, health systems strengthening efforts must not only focus on the protective aspects of the health system, but also the system's responsiveness to change; particularly relevant in a rapidly changing context such as Cambodia.

Methods

Conducting a health system review first required defining health system research to determine the inclusion criteria of the literature review. Health system research is defined for inclusion in the study according to the framework put forward by the Alliance for Health Policy and Systems Research of the World Health Organization in their 2012 publication *Health Policy and Systems Research: A Methodology Reader*. Health systems research therefore includes studies across multiple disciplines that relate to the functionality of the health system as a whole.

Health systems research is problem driven, as opposed to method driven, meaning that it can be defined through the purpose it is trying to achieve. As a result, health systems research can occur through a variety of approaches, including cross-sectional studies, case studies, the ethnographic lens, advances in impact evaluation, studies of policy and system change overtime, cross-national analyses, and action research (Gilson, 2012). Dependent on the discipline, research approach and objectives of health system research, however, studies can focus more primarily on specific functions of the overall system as a whole (Gilson, 2012).

Research was conducted through an in depth literature review regarding three primary areas of consideration within the Cambodian health system: 1) health system governance; 2) health system financing; and 3) health service delivery. Due to time constraints of the study period, the other health system functions were excluded from this review. Both published and non-published documents were sought. Journal articles were searched through PubMed (Medline), using the key words 'Cambodia' (MeSH terms) and 'health', yielding 524 results. In addition, literature was searched through Google Scholar using the terms 'Cambodia' and 'Health' with the requirement that they must both be in the article title, yielding 266 results. Finally, the 'Medicam-Cambodia' online library was used to access all of the Ministry of Health's publications. Only material published in the last ten years will be included in the literature review and the eligibility assessment according to the three mentioned categories above was undertaken by the author. Due to time constraint and language barriers, the researcher did not collected wide range of gray literature, especially for the reports written in the Cambodian language.

Additionally, unstructured interviews were conducted with key researchers on the Cambodian health system as well as implementers of many of Cambodia's innovative health

governance and finance strategies. The interviews involved health system researchers from the National Institute of Public Health, a deputy director of a Provincial health department (PHD), a director of an operational district (OD), and 2 administrators of Health Equity Funds (HEF) at different provincial referral hospitals. The interviews strengthened the researcher's understanding of implementation strengths and challenges of multiple contracting and social insurance schemes underway within the context of the Cambodian health system.

The literature review and key-informant interviews allowed for a strong base for a review of the health system. However, the review further highlighted key gaps in the current body of research. As a result, the final section of this paper will acknowledge important knowledge gaps that inhibited a more adequate and encompassing health system review.

Findings

Health System Governance

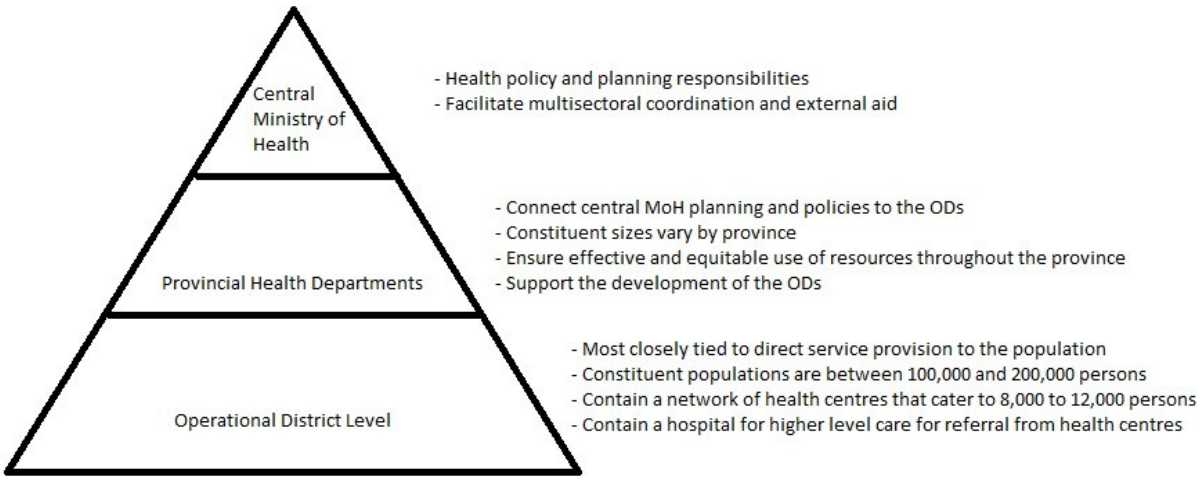
Overview

The current focus of the MoH in its reorganization of the health system is on the operational district level (OD). The new focus is in accordance with a continuation of the vertical oriented system from the central MoH through the provincial health departments (PHDs) to the ODs, as depicted in Figure 2. The central MoH level is responsible for health policy and planning, while facilitating multisectoral coordination and external aid. The provincial level is tasked with connecting the central MoH to the operational districts through the implementation of policies in the health sector plan (HSP) via the annual operations plan (AOP). Provincial health departments are further assigned with ensuring an effective and equitable use of resources, while supporting the development of their ODs. The OD level is the unit of the health sector that

is most closely tied to the population. ODs are designated based on economic and public health considerations, in order to maximize efficiency in health service coverage (Char, 2008, p. 7). Each OD contains a population between 100,000 to 200,000 persons, comprising of a network of Health Centres (HC) and a Referral Hospital (RH). HCs are geographically located so as to serve a catchment area of between 8,000 and 12,000 people (Lo & Sao, 2007). ODs therefore act as the primary entry point of the population into the health system through their service delivery.

Firstly, there is some overlap in function between the PHDs and the ODs in terms of the interpretation of national policies. PHDs have a "mandate to provide planning, resource coordination and monitoring of health services across the province" (Men *et al*., 2005, p. 5), yet ODs are also assigned the same function (Char, 2007). The lack of clarity in the different roles can provide complications in service planning and implementation. Moreover, PHDs are challenged as there are often significant disparities in staffing levels across their respective ODs, causing poor integration of national programmes at the OD level. In addition, financing information often bypasses the PHD Finance Office, creating difficulties for effective budget and resource allocation (Men *et al*., 2005).

Figure 2: Cambodia's health system governance structure



The MoH's focus on the development of the health system is placed on improving the functionality of the ODs. Being the primary contact point of the health services with the Cambodian population, however, ODs have a significant role in the functionality of the health system and are tasked with interpreting and implementing national and provincial health strategies. Moreover, ODs require flexibility in their service delivery as they must maintain effective comprehensive services based on the needs of the communities they service. Such requirements entail working closely with the administrative authorities of the local communities (Char, 2008). Particularly in rural areas, however, the duties of the OD are complicated through significant issues of infrastructure quality, as well available human and financial resource constraints.

Decentralization and Contracting Approaches

In 1998, the Government of Cambodia health reform plan began experimenting with a contractual approach at the OD level, covering 8 ODs and over 1 million people. Contracting has here been considered part of the health care system governance strategy as the Cambodian models have outsourced management duties for large segments of the population. However, contracting is multidisciplinary as it spans multiple functions of the health care system, not only including governance, but also health financing (through its performance-based payment rewards) and human resources (for its effects on staff behaviour though instituting incentives linked to performance-based payments).

The aim of the contracting approach was to gain knowledge and experience from different models of reform. The contract experiment models instituted were: 1) contracting-out of OD management to private non-governmental contractors; 2) contracting-in of OD

management to private contractors; and 3) maintaining the existing management system to act as control (Soeters & Griffiths, 2003). The contracting-out model gave the district contractor recipient complete control over staff, budgeting, and service delivery. The contractor was, however, bound by contract to achieve health service targets as indicated in the contract. The private actors in contracting-in models were provided less autonomy as they worked largely within the public sector. In this model, private providers managed ODs while staff was primarily civil servants and the management had to adhere to civil service regulations. All contractors were international non-governmental organizations (NGOs) due to insufficient bids from private for-profit and local NGO groups (Soeters & Griffiths, 2003).

To date, there has been extensive research involving contracting with non-state entities for health management. Loevinsohn & Harding (2005) investigated ten examples of such models, all of which were in low-income countries, concluding that contracting can be very effective and improvements can often be rapid. Their positive evaluation of contracting was achieved in different regional settings and for different services. Cambodia has also been host to much of this research. In the initial evaluation 30 months after contract scheme implementation, contracting-out models were shown to perform stronger than contracting-in models in terms of both service delivery indicators and cost-effectiveness, while being more equitable for the service population (Bushan *et al*., 2002). In addition, both contracting models were shown to outperform the control districts.

Despite the good performance of the contracting-out model, the MoH opted to initiate a new contracting model in mid-2003 (phase II), requiring contractors to work within government supply chains, budgets and infrastructure. The contractors were, however, provided partial autonomy in the management and control over staff (Jacobs *et al.,* 2010). The new contracting

model was, therefore, a combination of the contracting-in and contracting-out models. Furthermore, the new contracting model was in line with the Paris Declaration on Aid Effectiveness as it pushed for sustainability through increasing local Cambodian management of the health system.

Jacobs *et al.* (2009) examined this new model of contracting through assessing whether the transition to new management systems could sustain the high performance achieved under the previous contracting models. Their study was implemented in Kirivong Operational District, where the public health sector consisted of 20 HCs and an 80 bed RH. The authors aimed to examine whether the new contracting model led to changes in the level of service delivery, as well as any underlying causes of such changes. Through dissemination of cross-sectional surveys, monthly health management information system reports, quarterly performance results data collected by the contractor, as well as financial reports from the facilities, the authors found that under certain conditions the transition to new management systems could sustain the high performance indicators gained under previous contractual models. The shift was achieved through coordination between all blocks of the health system, while maintaining staff financial remuneration levels from the previous models. A performance-based management system was also seen as integral to the gradual handover of responsibilities. Despite the findings, the study contained limitations due to the lack of comparison with control ODs; however, the descriptive paper provides evidence that can be useful to the MoH when taking control over direct service provision in other ODs.

In terms of health system governance, decentralization must be viewed critically in terms of institutional capacity development. Men *et al.* (2002) examine the impact of decentralization policies on health management performance at the provincial level after early contracting

schemes, whereas Okamoto *et al.* (2009) assess the impact of decentralization on the institutional capacity development of the health system at the district level. At the provincial level it was recommended that building institutional capacity of health departments required: 1) "linking organization goals to system and individual"; 2) "the elevation of planning as a core leadership role for provincial health management"; 3) "strengthening the function of the province as a planner of human resources and lead negotiator of within-government performance based contracts"; 4) " the establishment of an enabling environment (sub-national sector wide management) for the province to adopt a lead role in monitoring and regulating resource allocation to secondary and primary level facilities"; and 5) "building capacity for deconcentration and adapting to political decentralization" (Men *et al.*, 2002, p. 14-15). It is further suggested that critical to the success of capacity building at the sub-national level is the careful timing and pace of health system reform.

Okamoto *et al.* (2009) assess the development of a district's institutional capacity through the assistance of an NGO, identifying key factors that shape the processes. The study indicated that there are four stages:

1) The unawareness stage: OD managers had little management concept prior to health contracting schemes;

2) The awareness stage: OD managers were aware of the new management systems yet passively followed instructions from high level authorities;

3) The empowerment stage: ODs were being supported by external management, provided more authority, and gained governance experience; and

4) The consolidation phase: OD managers governed health services by themselves, showing increased levels in confidence, and the ability to create partnerships with external agencies to improve local resources.

It was concluded that supportive supervision in combination with widening decision-making authority were primary influences in building OD institutional capacity. Such a model provides useful advice to positive decentralization methods of other ODs in Cambodia undergoing the internal contracting process to become 'Special Operating Agencies', which will be described below. Moreover, "developing institutional capacity may enhance service quality" (Okamoto *et al.*, 2009, p. 246).

Finally, through the HSP2 the MoH focuses on decentralization and deconcentration of health services through continuing contracting. The MoH plans on increasing autonomy to the ODs through the implementation of Special Operating Agencies (SOAs), as well as through block grants that will cover financial needs of the policy. The aim of SOAs is to improve the collaboration between government and donor funding, in accordance with the Paris Declaration on Aid Effectiveness (Char, 2008). SOAs are effectively a form of internal contracting, where market mechanisms are incorporated into public service provision for the purpose of improving efficiency (Keovanthanak & Annear, 2011). Management of SOAs remains within the MoH, yet district staff have greater levels of autonomy over their human resources. Moreover, management of SOAs include a performance-based incentive approach for staff, maintained through additional funding by service delivery grants (SDGs) from a donors' pooled fund. SOAs were implemented by the MoH under the belief that contracting-out models are unsustainable and therefore that the government must be in control of health service delivery.

Overall, the recent governance reforms have been greatly influenced through global actors as international NGOs implemented the governance reform strategy. Although the contracting models were shown to outperform the control districts, Cambodia continues to face significant issues of fragmentation in its health system resulting from the high presence of external actors (Lane, 2007). Moreover, contracting to international NGOs raises questions of long-term sustainability of the services and managements. Therefore, strategies must be devised on how best to incorporate contracting models into the government's bureaucracy, thereby allowing the MoH to improve and continue its role as steward of the health system.

Health System Financing

Overview

Health financing in Cambodia is from a combination of three sources: 1) households; 2) the government health budget; and 3) donors and other health partners. Funds from the various sources are used in a number of ways through either public health service delivery or the private sector. The essential purpose of health financing is to achieve the best possible outcome in terms of both allocation and efficiency in the use of resources. Cambodia spends roughly 5.9% of its total GDP on health expenditures (World Bank Databank, 2012). Despite this, only 21.3% of the total health expenditure is from the government, whereas 73.3% is from household out-of-pocket payments (World Bank World Development Indicators, 2012). Resource allocation and efficiency must be based on the desired outcome of equitable access to health services.

Out-of-pocket health expenditure has been shown to significantly cause household indebtedness and poverty. Through prospective analysis after an epidemic of dengue fever, Van Damme, Van Leemput, Ir, Hardeman & Meessen (2004) found that even modest out-of-pocket

health expenditure frequently leads to household spending of savings, selling consumables, selling assets and borrowing money to finance health care costs. The authors highlight that "health care is also an economic reality, and health systems should aim at financial protection to decrease the economic impact of health care costs on poor people, especially in economies in transition, where health care is fast becoming a commodity open to market forces" (p. 279). Moreover, the public health system must be more attractive and accessible to decrease poor people spending on private services.

In addition, only a small proportion of government health expenditure was spent directly on service delivery and financial resources that reach front line services fall short of what is required. Government health expenditures are dominated by non-salary operational expenditures, which reflect the low-salaries of health workers providing insufficient incentives. Moreover, "misaligned authority, bureaucratic red tape, limited institutional capacity and ineffective checks and balances are serious constraints for effective public expenditure" ("Cambodia health PETS," 2008). Reducing the risk of leakage requires a comprehensive framework that will, overtime, improve services and therefore increase utilization of public services. The MoH must increase the effectiveness at which resources are deployed, primarily as "institutional fragmentation and rigidity in both the external aid community and domestic health system remain barriers to progress" (Lane, 2007, p. 3).

The Government of Cambodia has been implementing reforms in the health care system since 1995 with the implementation of the health coverage plan aimed at addressing the shortcomings the previous system based on the Vietnamese model. The Financial Charter of 1997 moved the Cambodian health system away from the official policy of 'free' health care, instituting a fee-for-service system in the aims of reducing unofficial fees. At this time, user fees

were established in an attempt to decrease unofficial user-fees and assist with the direct financing of health facilities (Barber, Bonnet & Bekedam, 2004). Significant evidence exists regarding the positive implications user-fees had on their desired goals of standardizing payments and removing cost unpredictability, while promoting financial sustainability of the system. In Takeo RH, for example, fixed and official user-fees also contributed to increased service utilization, allowing the hospital to gradually phase out external donor support over a 4 year period (Barber, Bonnet & Bekedam, 2004). After the introduction of user-fees, however, the MoH was required to explore financing models that would prevent costs from being significant barriers to access of services for the poor. Without such measures, equitable access would be an ongoing struggle.

In accordance with the World Health Assembly's 2005 Resolution on financial protection, Cambodia's financing reforms accept that the poor and vulnerable require highly subsidized arrangements (Tangcharoensathien et al., 2011). Through a systematic review of the evidence of obtained from conditional cash transfers programmes, Lagarde, Haines and Palmer (2007) conclude that such schemes are effective in increasing the use of preventative services and sometimes in improving overall health status. Demand side financing (DSF) in health is one such approach, where monetary transfers to households are provided for payment of public health care services and other related costs such as transportation. Furthermore, there exists significant evidence from both Cambodia and Laos that DSF mechanisms work better than a simple fee exemption policy. DSF in health was developed as a tool to tackle issues of "efficiency, fairness and quality of the health systems that have been created and maintained through significant tax-based financing" (Gupta, Joe & Rudra, 2010, p. 3). As described above through the prior Cambodian model of "free" healthcare, tax-based financing within the health system was not meeting the needs of the poor.

Cambodia has begun utilizing DSF approaches, primarily through Health Equity Funds (described below). However, reliable funding for such approaches remains the primary challenge in scaling up such schemes for the entire poor population throughout the country (Tangcharoensathien et al., 2011).

Health Equity Funds

Health equity funds (HEFs) emerged in Cambodia as a mechanism to promote access to health services for Cambodia's poor in an equitable manner. HEFs are a demand-side financing strategy promoting equity in access to health services in an environment that requires user-fees. HEF beneficiaries are identified according to eligibility criteria, either before health services are accessed or at the health facility through interviews. HEFs can cover partial or full costs of access to services, including the costs of user-fees and transportation (Ir, Bigdeli, Meessen & Van Damme, 2010). After two years of implementation in Sotnikum OD, Hardeman, Van Damme, Van Pelt, Ir, Kimvan & Meessen (2004) showed that HEFs effectively improved financial access to health services for the poor while being cost-effective and containing minimal leakage to the non-poor. Noirhomme *et al.* (2007) examined the impact on HEFs on hospital utilization, concluding that they had positive impacts for the poor while the number of paying patients remained constant. Despite this, financial barriers are only one constraint to health care access, with the others including geographical, informational and intra-household.

At their onset, HEFs were funded and piloted by donor organizations who perceived that supply-side growth needed complementary action from demand-side financing. Despite questions over the sustainability of such funding schemes, all actors involved believe that HEFs are a current and pragmatic solution to financial barriers to services. Moreover, the policy

context of Cambodia at the time HEFs were being piloted stressed the need for equity in access to the public health system, providing an appropriate context to scale-up such schemes. After the production of credible local evidence, the Government of Cambodia issued a Prakas (directive) in 2006 that solidified HEFs position in financing health care for the poor. In 2008, HEFs financed through both donors and government schemes covered over 50% of Cambodia's population (Ir, Bigdeli, Meessen & Van Damme, 2010). Moreover, Bigdeli and Annear (2009) stress that the effectiveness of HEFs are enhanced when mandated through a third-party organization at the community and facility level. All in all, HEFs are a primary innovation that used evidence produced in the Cambodian context thereby allowing for scaling-up to improve the equity of access to health services for the Cambodian population.

HEFs have also been used to specifically target access to skilled birth attendants, which has been put forward in the HSP2 as an area of strategic importance for the MoH. Ir, Horemans, Souk and Van Damme (2010) analysed the effects of health equity fund vouchers as a financial mechanism to address priority health services for maternal health in three rural ODs of Cambodia. Their study found that areas with voucher schemes had a significantly greater increase in utilization of skilled birth attendants and in 2008 HEF beneficiaries accounted for 40.6% of the expected number of births among the poor. It was concluded that vouchers can remove barriers and promote equity in the area of safe birth services; however, demand-side financing must be coupled with a sufficient supply of quality services in rural areas.

Community Based Health Insurance

As a result of the sustainability concerns around HEF schemes, Cambodia has also been experimenting with the implementation of voluntary Community Based Health Insurance (CBHI) programs. CBHI schemes have been implemented in the informal sector, whereas HEF subsidy schemes are for the poor. As the taxation system is not adequately developed in Cambodia to implement a government sponsored social health insurance program, CBHI provides an opportunity for risk-sharing where communities have essential roles in "mobilizing, pooling, allocating, managing and/or supervising health-care resources" (Jacobs *et al.*, 2008, p. 140). Currently CBHI schemes use a capitation system for health provider payment with HEFs purchasing premiums for the poor (Annear, Bigdeli & Jacobs, 2011). CBHI schemes have not however met their potential due to low uptake within communities and there exists little literature as to why the uptake has been slow. As a result, the effectiveness of CBHI schemes in Cambodia also remains in question.

Jacobs *et al*. (2008) discuss the potential advantages and disadvantages of using resources from HEFs to purchase CBHI premiums with the goal of achieving health insurance coverage for the poor. Utilizing HEFs to purchase CBHI premiums are argued to potentially provide a subsidy that is required for growth of the institutional capacity of such insurance schemes, primarily through increasing purchasing power that will allow for increased risk sharing and decreased costs (Annear, Bigdeli, Eang & Jacobs, 2008).The authors further argue that premium rates for the poor should be discounted so as to mitigate negative cross-subsidies.

Health System Service Delivery

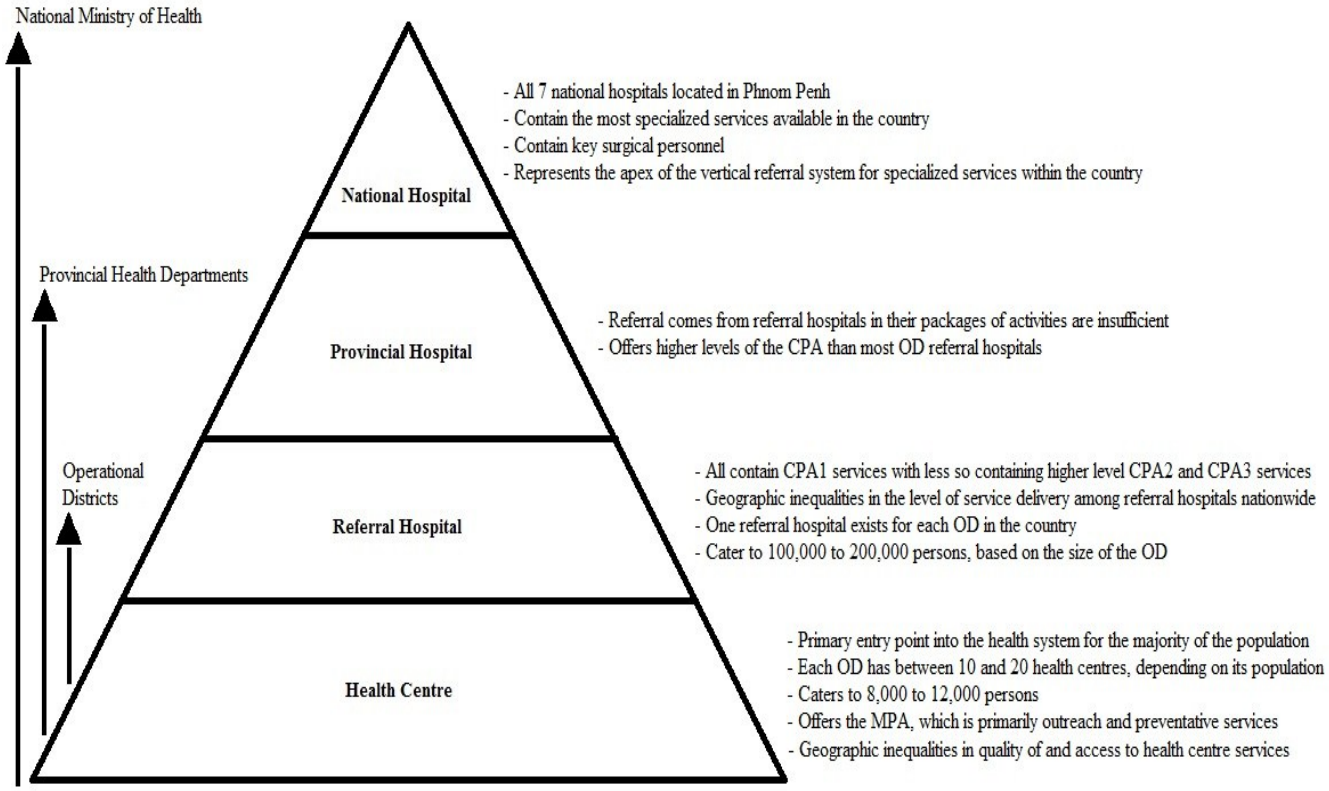
Overview

The MoH's Health Coverage Plan, outlined in the HSP2, is a framework for developing full public coverage of the basic health needs of the Cambodian population through integrated quality care. The MoH plans to do so by providing "preventive, curative and promotion in accordance with nationally accepted principles, standards and clinical guidelines" (Char, 2008, p. 3). Within the public system, the Minimum Packages of Activities (MPA) are provided at the health centre (HC) level, catering to 8,000-12,000 people, whereas the Complementary Packages of Activities (CPA) are provided at the referral hospital (RH) level, catering to 100,000-200,000 people. Each OD has between 10 and 20 HCs and one RH. The HSP2 intends to reach its stated objectives through strengthening the role of HCs by building capacity to implement the MPA, as well as building capacity of the RHs to implement the CPA. More coordination is required between HCs and RHs for effective integrated care.

The MPA involves primarily outreach services, such as preventative measures (i.e. immunizations and health education), while also having basic non-surgical procedures and pharmaceuticals. Moreover, Village Health Volunteers are connected to the MPA at HCs and health posts and are responsible for outreach within respective villages as a form of primary health care. As of 2005, 439 of the 966 HCs provided the full MPA. The CPA is capable of providing basic surgical procedures; however, CPA is stratified into three different levels of capacity (CPA1, CPA2 and CPA3, from lowest to highest levels of service delivery). Not all OD RHs, therefore, have the same capacity of service delivery leading to geographic health service inequalities. In 2005, 28 RHs provided CPA2 and 16 provided CPA3 ("National guidelines on", 2006). Above the RF there are provincial hospitals, which have a higher capacity of service

delivery of the stratified CPAs. On the top of the vertical service delivery pyramid of the public system are national hospitals, of which there are 7 located in Phnom Penh. The national hospitals contain specialized services delivery and key surgical personnel. Figure 3 shows the hierarchy of the levels of service delivery within the Cambodian public health system.

Figure 3: Cambodia public health system service delivery structure



Fragmentation and Low Public Sector Utilization

The HSP2 health service delivery strategy envisions all communities having access of both MPA and CPA services, as well to accredited private sector providers. Importantly, capacity issues in human and financial resources, as well as barriers of communities to services, mean that the MPA and CPA are not currently effective throughout rural areas of the country. The HSP2 states that full and equitable coverage will be achieved as SOAs will build on previous successes

seen through contracting and, in turn, improve service quality and access. In addition, services and health care facilities will be more closely tied to the needs of the population through improved information systems. All of this will be achieved through increased coordination of a multi-departmental MoH Service Delivery Monitoring Team that will support all governance levels of the health system, including other national programs (Char, 2008). Challenges are still significant, however, as seen through: 1) the slow growth in public service utilization; 2) the overall low quality of care in both public and private sectors; 3) significant fragmentation of service delivery, funding, and administrative authority; 4) ineffective regulation and weak coordination between public and private services; and 5) geographical barriers that include a lack of knowledge about services in remote areas (Char, 2008).

In addition, despite significant improvement over the last decade, Cambodia's public health sector still has low overall utilization. Importantly, the 2010 Cambodian Demographic and Health Survey noted that only 28.9% of the population who sought first treatment used public facilities, whereas 56.8% accessed private care. Moreover, 5.4% used non-medical services (primarily shops or markets) and 1% of the population left the country for treatment ("Cambodia Demographic and Health Survey 2010," 2011). Within the public sector, rural areas primarily utilized HCs (18% of total), whereas urban areas more often sought treatment in national hospitals (12% of total). Within the private sector, private clinics were most frequently opted for care in both urban and rural areas ("Cambodia Demographic and Health Survey 2010," 2011). Such health seeking behaviour is of particular concern given the inadequate regulation of the private sector of service provision. Despite regulation of the rapidly growing private sector being a priority of the MoH, the "enforcement ability is constrained by weaknesses in the Police and Judiciary systems" ("Cambodia: Country Health Information Profiles," 2010, p. 50).

The HSP2 describes the integration of the private sector providers, including NGOs, into the national health policy implementation framework as an ongoing supply-side challenge in service delivery (Char, 2008). Continued fragmentation will result in inefficient use of resources and continued gaps in services, particularly given the lack of information sharing from private sector providers to the MoH (Char, 2008). Service delivery must be more strongly coordinated between public and private services for effective and equitable health service delivery.

Equity in service delivery is an ongoing issue as the health system is currently plagued by inequalities from multiple and interrelated causes. Despite such challenges, however, the Cambodian policy context stresses a shift towards improving service access for all Cambodians, regardless of their geographic location or income. The Health Strategic Plan (Char, 2008) outline's the Royal Government of Cambodia's commitment to improving its service delivery packages its population, as mentioned above. As stated in relation to HEFs, the appropriate national policy context can act as a catalyst for holistic improvements to such ongoing issues.

Recommendations for further research

Using a knowledge translation framework, Ir, Bigdeli, Meessen & Van Damme (2010) suggest that knowledge translation is rarely a linear process and involves the interaction between wide ranges of partners. Their proposed framework for analysing the knowledge translation of the Health Equity Fund (HEF) process includes four stages: 1) exploiting existing knowledge; 2) creating new knowledge or innovations; 3) transferring new knowledge; and 4) adopting and using knowledge. Essential and connecting all four stages is the context environment for which knowledge is produced. In addition, the WHO World Report on Knowledge for Better Health (2004) states that: "Every country should have a national health research system that focuses its

energies on health problems of national interest, especially those which will strengthen health systems" (p. xv). Therefore, for translation of knowledge into policy, the Cambodian health system requires a continued and comprehensive assessment of the "stock of knowledge" (Ir, Bigdeli, Meessen & Van Damme, 2010, p. 202) available within the health system from which to build. The above health system review was limited as a result of gaps in health system research, which will be described below.

1. Health System Governance

In terms of health system governance, research has suggested significant improvements through contracting models rather than a continuation of vertical health care system (Bushan *et al*., 2002; Soeters & Griffiths, 2003). Although improvements have been seen in contracting models through a variety of indicators and studies, Cambodia's new SOA model has yet to be adequately evaluated. Keovanthanak & Annear (2011) provide a comprehensive framework for the evaluation of SOAs based on equity and access to health services; however, no critical evaluation has happened to date. More importantly, there must be a greater body of evidence on maintaining service delivery in periods of governance reform, such as when implementing SOAs. As a result, future studies should provide in depth examinations of the transference from earlier contracting-out models to the more sustainable SOA model.

Moreover, experts have called on the MoH to establish itself as an effective steward of the overall health system, and to do so, national and decentralized health authorities must have a pluralistic view of the health system (Meessen *et al.*, 2011). A holistic view of the health system by health authorities will only be achieved if the public sphere is more adequately taken into account. The disaffection with the public health system varies across subpopulations within

Cambodia, often according to places, socioeconomic status, or health issue of concern. Greater research must be conducted so as to provide guidance to the MoH on effective health system stewardship. As the Cambodian health system is highly pluralistic, an entire research programme on the health system composition must be developed (Meessen *et al.*, 2011). Greater knowledge must be produced in regards to the public and private sectors of the health system for the MoH to advance policy that improves overall health service delivery within the country.

2. Health System Financing

Health financing research has been correctly focused on limiting economic barriers to service access. As a result, HEFs have been significantly researched and are proven an effective demand-side financing mechanism within the health system. Importantly, HEFs have also been studied in their development from pilots to government policy (Ir, Bigdeli, Meessen & Van Damme 2010), providing evidence and useful considerations when scaling up of other programmes in Cambodia. HEFs, however, can be improved and ongoing operational research is required to ensure all potential beneficiaries are utilizing the services in the most efficient and cost effective method as possible. One such approach could be through comparing different modes of identifying HEF beneficiaries through reviews of the organizations providing funding, the organizations identifying eligibility in communities and at hospitals, and whether identification occurs most effectively before or after service delivery (Tangcharoensthien *et al.*, 2011).

Jacobs & Price (2005) suggest that identification of HEF beneficiaries by community members is feasible as it is both inexpensive, and effective. Moreover, it is suggested that indigenous community organizations rather than international NGOs are more cost-efficient in

implementing HEFs and will enhance local ownership, increasing the likelihood of long-term sustainability. To date there is inadequate operational research on knowledge transfer and capacity building of HEFs administered by international NGOs transferring to potentially more sustainable local community organizations.

Health financing research, however, is still lacking in regards to out-of-pocket consumer expenditure as well as CBHI schemes. Increased research must focus on understanding out-of-pocket expenditure and particularly how it relates to health seeking behaviour of individuals (Van Damme, Van Leemput, Ir, Hardeman & Meessen, 2004). Moreover, CBHI schemes must be explored in relation to potential ways of improving their uptake, and therefore, ability to act as a mechanism of limiting household indebtedness resulting from health care expenditure.

However, CBHI schemes must be evaluated in regards to how they interact with other aspects of the financing system as currently there is very little understanding. Importantly, CBHI schemes have largely been evaluated in regards to their impact on individual members, ignoring the potential impacts on other aspects of the financing system. Bennett (2004) provides a framework for evaluating these financing programmes that can be used to "explore how CBHI schemes may (or may not) contribute to national policy objectives, and how different features of CBHI schemes, and government policy may interact to affect achievement of policy objectives" (p. 148).

To date, the effects of bridging CBHI and HEF schemes have not been substantially evaluated as coverage is still very low. Annear, Bigdeli & Jacobs (2011), however, assess the impact of introducing HEFs into CBHI in terms of equity and effectiveness, arguing that negative cross-subsidization was recorded where capitation was used as the payment mechanism.

As a result, the authors argue that targeted subsidies through direct reimbursement to the provider (such as HEFs) are a more efficient use of resources, thereby improving equity of health care coverage. Detailed studies are further required to evaluate the financial and coverage effects of combining HEF and CBHI schemes (Annear, Bigdeli, Eang & Jacobs, 2008).

Furthermore, increased research must be conducted as to the causes of low uptake of CBHI schemes within Cambodia, particularly as the schemes are voluntary, yet ineffective if they remain underutilized. Ozawa and Walker (2009) attempt to understand individual trust in CBHI programmes. Evidently, trust in insurance schemes was significantly greater in those who enrolled when compared to those who did not enroll. Their study, however, highlighted the need for staff of health insurance schemes to build interpersonal relationships with villagers, as building trust in the schemes is essential for greater enrollment. In a later study, Ozawa and Walker (2011a) added to this knowledge through finding that it was vital for the insurers to have a greater presence in communities to increase knowledge of the programmes, thereby increasing enrollment. To date, all channels of communication have not yet been fully explored, such as CBHI receiving endorsement from local authorities. Such considerations must be taken into account for CBHI programme uptake and only then will the schemes adequately reduce the potential impact of health-related economic shocks. In areas where CBHI schemes are being piloted, communication methods must be studied in relation to programme uptake to understand best practices. Only with sufficient ‘marketing’ research will the MoH be capable of effectively scaling up CBHI schemes throughout the country.

3. Health Service Delivery

Barriers to health services access are almost entirely researched through the perspective of health financing and a greater focus must be placed on other obstacles, such as quality health education (Noirhomme *et al.* 2007). Such knowledge gaps greatly limit the knowledge of health seeking behaviour in Cambodia; a topic which must be explored in social, economic, and geographic contexts.

Jacobs, Ir, Bigdeli, Annear and Van Damme (2012) discuss an analytical framework to assess health service within the context of Cambodia that highlights the need for contextual understanding of the multiple barriers that plague the health system. Through an overview of multiple access barriers (geographic, service availability, service affordability, and service quality), the authors outline existing interventions that are being used to tackle such issues. A framework is produced for assessing access barriers and is applied to two case studies in Cambodia. Importantly, the authors conclude that a combination of interventions is required to tackle specific access barriers and this must be in accordance with contextual factors. Although the framework can be applied to enhance research on access to health care, and therefore service delivery, it must be applied to the specifics of different locations throughout Cambodia.

To date, there is very little literature regarding the consumer's choices in the health service delivery. Ozawa and Walker (2011b), however, have focused on individuals' trust in the public and private system, which ranked as the fifth most important consideration for choosing the public system and second most important consideration for choosing private care. The authors conclude that "measuring people's trust in various providers is essential to understand who is more likely to seek care from which providers, what care they may receive and what

treatment recommendations they may comply with" (Ozawa & Walker, 2011b, p. 28). More in depth research is required to explore the extent to which trust in health service providers compares with other factors of health seeking behaviour.

Finally, as illness and health seeking behaviour have culturally embedded understandings and practices, addressing barriers and successes to health services must incorporate sociocultural elements. Through ethnographic fieldwork, Smith (2011) examines the processes by which medical treatment is sought in an exploration of suspected dengue infections in Siem Reap Province. The author concluded that messages from doctors and medical professionals do not replace prior knowledge on illness, but rather are "interpreted and interwoven with traditional understandings" (p. 362). Health promotion practices, such as health education that pushes for people to access health care facilities, must reflect on local understandings to determine the most effective delivery methods. Regarding health seeking behaviour, Smith states that: "while surveys assessing knowledge, attitudes, and practices may deliver results that indicate a high comprehension of health education messages, qualitative approaches are able to delve more thoroughly into local interpretations and applications" (p. 363). Such research methodologies can therefore allow for programme staff to more adequately incorporate local social contexts, relevant for design of health promotion activities and schemes aimed at mitigating the barriers to health services.

4. Global health actors and health system strengthening in Cambodia

Finally, as Cambodia has significant funding from donors targeting specific diseases or concerns (Marchal, Cavalli & Kegels 2009), research must focus on the factors in which such initiatives can have the greatest possible impact on the overall functionality of the health service

delivery. Despite such approaches not necessarily contributing towards overall health system strengthening, Egami *et al.* (2012) pragmatically attempt to understand whether service delivery within health systems can be enhanced through such initiatives. The authors concluded that vertical disease-specific programmes could positively contribute to needed service delivery, yet may also have negative effects on the overall health system. Cambodia, however, had examples of a gradual process of specific vertical programmes being integrated into basic services, enhancing the overall health service delivery within the health system. For such programmes to be successful, however, local context of the impacts of disease specific interventions must be systematically taken into account.

Looking specifically at tuberculosis programmes, Atun, Weil, Eang and Mwakyusa (2010) further suggest that global health initiatives must take into account local health systems and the nature of disease epidemics within each country. Findings from tuberculosis programmes in Cambodia show that advances in disease control have contributed to overall health systems strengthening, as concurrent "efforts to innovate systems and disease responses are mutually reinforcing" (p. 2169). Given the extent of donor funded initiatives in Cambodia, however, ongoing research must focus on how such activities are contributing to or harming health service delivery within the overall health system.

Discussion

The above health system review provides an adequate starting point from which to assess the current health situation in Cambodia. However, the above health system review was plagued by gaps in research that inhibited an adequate and more holistic picture. Literature on the Cambodian health system contains clear evidence of multiple weaknesses and gaps which must

be addressed for progress in knowledge that can lead to policy implementation. As such, effective interventions are hindered by a lack of evidence on best practices. Importantly, as the Cambodian health system is fragmented between public and private sector providers (including NGOs), information sharing is inadequate (Lane, 2007). For the MoH to effectively exercise its role as steward of the overall health system, knowledge within the Cambodian context must be more effectively integrated through high quality evidence.

Establishing pragmatic research agendas will lead to effective knowledge translation to policy. Only with sufficient evidence of best practices in health policy and programme reform will the Cambodian health system continue to improve its overall functionality. Importantly, Cambodia's health system is experiencing dramatic and rapid changes through its ongoing innovation and reform. As such, research must focus on knowledge translation within the social, economic, and policy contexts of Cambodia. For Cambodia to scale-up current programmes or create new approaches to health governance, health financing, and health service delivery, the weaknesses in research and evidence suggested above must be addressed.

Conclusion

Cambodia's health system has undergone significant improvements since innovative reform began less than two decades ago, as illustrated through Cambodia's superior health indicators when comparing globally to its income group. Such improvements have occurred despite its recent history of conflict and extreme political instability. The Royal Government of Cambodia, local stakeholders, and the international community can be commended for their achievements.

Despite the positive trends, however, a number of significant constraints limit continued and more rapid improvements occurring throughout the health system. Cambodia's health system is still highly fragmented and utilization of public services remains low. Multiple obstacles still exist in access to services, including, but not limited to, financial and infrastructural barriers. Geographic inequalities exist within the country in terms of services available as well as access to programs that specifically target the poor. HEFs, for example, still do not cover large proportions of Cambodia's poor population (Ir, Bigdeli, Meessen & Van Damme, 2010) and out-of-pocket health expenditure has been shown to significantly cause household indebtedness and poverty (Van Damme, Van Leemput, Ir, Hardeman & Meessen 2004). The MoH must therefore continue its efforts to expand current programs and innovate new initiatives based on local contexts. Given the rapid changes currently occurring throughout the country, policy development in Cambodia must anticipate future epidemiological shifts through a prospective social and economic analysis.

Finally, international actors have greatly influenced the Cambodian health system at all levels and at all functions. Importantly, the MDGs, an international health initiative, have driven state policy and are used by the Cambodian government as aggregate performance indicators. Furthermore, health system governance, financing and service delivery are influenced by international actors through contracting, funding, and public service delivery priorities, respectively. Subsequently, Cambodia's health policy is influenced by levels, from local contexts to international agendas. Therefore, both the micro and macro scales are assisting with the vast improvements occurring in Cambodia's health system through its ongoing state of transition.

Works Cited:

Annear, P. (2009). Cambodia: Developing a strategy for social health protection in Cambodia. In *Promoting Sustainable Strategies to Improve Access to Health Care in the Asian and Pacific Region* (pp. 1-36). United Nations Economic and Social Commission for Asia and the Pacific.

Annear, P., Bigdeli, M., Eang, R., & Jacobs, B. (2008). Providing access to health services for the poor: Health equity in Cambodia. In *Health and social protection: experiences from Cambodia, China and Lao PDR* (pp. 189-226). Antwerp, Belgium: ITG Press.

Annear, P., Bigdeli, M., & Jacobs, B. (2011). A functional model for monitoring equity and effectiveness in purchasing health insurance premiums for the poor: Evidence from Cambodia and the Lao PDR. *Health Policy*, *102*(2), 295– 303.

Atun, R., Weil, D., Eang, M., & Mwakyusa, D. (2010). Health-system strengthening and tuberculosis control. *The Lancet*, *375*(9732), 2169-2178.

Barber, S., Bonnet, F., & Bekedam, H. (2004). Formalizing under-the-table payments to control out-of-pocket hospital expenditures in Cambodia. *Health Policy and Planning*, *19*(4), 199-208.

Bennett, S. (2004). The role of community-based health insurance within the health care financing system: a framework for analysis. *Health Policy and Planning, 19*(3), 147-158.

Bigdeli, M., & Annear, P. (2009). Barriers to access and the purchasing function of health equity funds: lessons from Cambodia. *Bull World Health Organ*,*87*(7), 560-564.

Bushan I, Keller S, Schwartz B. 2002. Achieving the twin objectives of efficiency and equity: contracting health services in Cambodia. ERD Policy Brief Series, Number 6. Manila: Asian Development Bank, Economics and Research Department.

Central Intelligence Agency. (2013). The World Factbook: Cambodia. Updated January 7, 2013, Retrieved January 30, 2013, from https://www.cia.gov/library/publications/the-world-factbook/geos/cb.html

Char, M. Department of Planning & Health Information. (2008). *Health strategic plan 2008-2015*. Phnom Penh: Ministry of Health.

Egami, Y., Fujita, N., Akashi, H., Matsumoto, Y., Ohara, H., & Takeuchi, M. (2012). Can health systems be enhanced for optimal health services through disease-specific programs? – results of field studies in viet nam and cambodia. *BioScience Trends*, *6*(2), 1-6.

Gilson, L. (2012). What is health policy and systems research? In L. Gilson (Ed.), *Health Policy and Systems Research: A Methodology Reader.* Retrieved from http://www.who.int/alliance-hpsr/alliancehpsr_reader.pdf

Grundy, J., Khut, Q. Y., Oum, S., Annear, P., & Ky, V. (2009). Health system strengthening in Cambodia—a case study of health policy response to social transition. *Health Policy*, *92*(2-3), 107-115.

Gupta, I., Joe, W., & Rudra, S. (2010). *Demand side financing in health: how far can it address the issue of low utilization in developing countries?* Geneva: World health Organization. World health report 2010, Background Paper # 27.

Hardeman, W., Van Damme, W., Van Pelt, M., Ir, P., Kimvan, H., & Meessen, B. (2004). Access to health care for all? user fees plus a health equity fund in Sotnikum, Cambodia. *Health Policy and Planning*, *19*(1), 22–32.

Health Systems 20/20. (2012). *Health System Report: Cambodia*. Retrieved from http://healthsystems2020.healthsystemsdatabase.org/reports/Reports.aspx

Ir, P., Bigdeli, M., Meessen, B., & Van Damme, W. (2010). Translating knowledge into policy and action to promote health equity: The health equity fund policy process in Cambodia 2000–2008. *Health Policy*,*96*(3), 200-209.

Ir, P., Horemans, D., Souk, N., & Van Damme, W. (2010). Using targeted vouchers and health equity funds to improve access to skilled birth attendants for poor women: a case study in three rural health districts in Cambodia. *BMC Pregnancy & Childbirth*, *10*(1).

Islam, M., ed. 2007. *Health Systems Assessment Approach: A How-To Manual. S*ubmitted to the U.S. Agency for International Development in collaboration with Health Systems 20/20, Partners for Health Reform *plus*, Quality Assurance Project, and Rational Pharmaceutical Management Plus. Arlington, VA: Management Sciences for Health.

Jacobs, B., Bigdeli, M., van Pelt, M., Ir, P., Salze, C., & Criel, B. (2008). Bridging community-based health insurance and social protection for health care – a step in the direction of universal coverage?.*Tropical Medicine and International Health*,*13*(2), 140-143.

Jacobs, B., & Price, N. (2005). Improving access for the poorest to public sector health services: insights from Kirivong operational health district in Cambodia. *Health Policy and Planning*, *21*(1), 27-39.

Jacobs, B., Ir, P., Bigdeli, M., Annear, P., & Van Damme, W. (2012). Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income asian countries. *Health Policy and Planning*,*27*(4), 288-300.

Jacobs, B., Thome, J., Overtoom, R., Sam, O. S., Indermuhle, L., & Price, N. (2010). From public to private and back again: sustaining a high service-delivery level during transition of management authority. *Health Policy and Planning*, *25*(3), 197–208.

Keovathanak, K., & Annear, P. (2011). The transition to semi-autonomous management of district health services in Cambodia: assessing purchasing arrangements, transaction costs and operational efficiences of special operating agencies. In H. Jalilian & V. Sen (Eds.), *Improving Health Sector Performance* (pp. 45-76). Singapore: Institute of Southeast Asian Studies Publishing.

Lagarde, M., Haines, A., & Palmer, N. (2007). Conditional cash transfers for improving uptake of health interventions in low- and middle-income countries. *JAMA, 298(*16), 1900-1910.

Lane C. (2007) *Scaling Up for Better Health in Cambodia*. World Health Organization & Ministry of Health, Kingdom of Cambodia: Geneva, Switzerland.

Lo, V., & Sao, S. Ministry of Health, Department of Planning & Health Information. (2007). *Cambodia health information system: Review and assessment*. Phnom Penh: Ministry of Health.

Loevinsohn, B., & Harding., A. (2005). Buying results? Contracting for health service delivery in developing countries. *Lancet 366*, 676-681.

Marchal B, Cavalli A, Kegels G (2009) Global Health Actors Claim To Support Health System Strengthening—Is This Reality or Rhetoric? PLoS Med 6(4):e1000059. doi:10.1371/journal.pmed.1000059

Meessen, B., Bigdeli, M., Chheng, K., Decoster, K., Ir, P., Men, C., & Van Damme, W. (2011). Composition of pluralistic health systems: how much can we learn from household surveys? an exploration in cambodia. *Health Policy and Planning*, *26*(1), 30-44.

Men, B., Grundy, J., Cane, J., Lon Chan, R., Nguon, S. A., Sann, C. S., Jenkinson, K., & Boreland, M., Maynard, J., Biggs, B. (2005). Key issues relating to decentralization at the provincial level of health management in Cambodia. *International Journal of Health Planning and Management*, *20*, 3-19.

MDG Monitor. (2012). *Cambodia MDG Profile*. Retrieved from http://www.mdgmonitor.org/factsheets_00.cfm?c=KHM&cd=116 12 February, 2012.

Ministry of Health. (2006). *National guidelines on complementary package of activities for RF development from 2006 to 2010*. Retrieved from Ministry of Health website: ftp://ftp.wpro.who.int/scratch/HSD/Service_delivery_profiles/Cambodia/Documents from country/CPA Guidelines Eng.pdf

Ministry of planning (2010). *Achieving Cambodia's Millennium Development Goals.* Retrieved from:http://www.un.org.kh/undp/media/files/CMDG%20Report%202010.pdf

National Institute of Statistics, Directorate General for Health, and ICF Macro, 2011. *Cambodia Demographic and Health Survey 2010.* Phnom Penh, Cambodia and Calverton, Maryland, USA: National Institute of Statistics, Directorate General for Health, and ICF Macro.

Noirhomme, M., Meessen, B., Griffiths, F., Ir, P., Jacobs, B., Thor, R., Criel, B., & Van Damme, W. (2007). Improving access to hospital care for the poor: comparative analysis of four health equity funds in Cambodia. *Health Policy and Planning*, *22*(4), 246–262.

Okamoto, M., Nhea, S., Akashi, H., Kawaguchi, L., Ui, S., Kinoshita, M., & Aoyama, A. (2009). Developing institutional capacity of health service system management at the district level in rural Cambodia. *BioScience Trends*, *3*(6), 239-246.

Overseas Development Institute (2010). Cambodia: Case study for the MDG gap task force report. Retrieved from:

http://www.un.org/en/development/desa/policy/mdg_gap/mdg_gap2010/mdggap_cambodia_casestudy.pdf

Ozawa, S. & Walker, D. (2011a).Community-based health insurance schemes in Thmar Pouk. In H. Jalilian & V. Sen (Eds.), *Improving Health Sector Performance* (pp. 365-384). Singapore: Institute of Southeast Asian Studies Publishing.

Ozawa, S., & Walker, D. (2011b). Comparison of trust in public vs private health care providers in rural Cambodia. *Health Policy and Planning*, *26*(1), 20-29.

Ozawa, S., Walker, D. (2009),"Trust in the context of community-based health insurance schemes in Cambodia: Villagers' trust in health insurers", Dov Chernichovsky, Kara Hanson, in (ed.) Innovations in Health System Finance in Developing and Transitional Economies (Advances in Health Economics and Health Services Research, Volume 21), Emerald Group

Smith, S. (2011). Factors influencing health-seeking behaviour in Siem Reap: A qualitative analysis. In H. Jalilian & V. Sen (Eds.), *Improving Health Sector Performance* (pp. 353-364). Singapore: Institute of Southeast Asian Studies Publishing.

Soeters, R., & Griffiths, F. (2003). Improving government health services through contract management: a case from Cambodia. *Health Policy and Planning*,*18*(1), 74-83.

Tangcharoensathien, V., Patcharanarumol, W., Ir, P., Aljunid, S., Mukti, A., Akkhavong, K., Banzon, E., & Huong, D. (2011). Health-financing reforms in Southeast Asia: challenges in achieving universal coverage. *The Lancet*, *377*(9768), 863-873.

UNAIDS. (2012). *Cambodia*. Retrieved from http://www.unaids.org/en/regionscountries/countries/cambodia/ 12 February, 2012.

UNDP (2011). *What Are the Cambodian Millennium Development Goals.* Retrieved from:http://www.un.org.kh/undp/mdgs/cambodian-mdgs/what-are-the-cambodia-millennium-development-goals

UNICEF (2009). *Achieving Cambodia's Millennium Development Goals: GAP Analysis.* Retrieved from: http://www.unicef.org/cambodia/CMDG_Gap_Analysis_FINAL.pdf

Van Damme, W., Van Leemput, L., Ir, P., Hardeman, W., & Meessen, B. (2004). Out-of-pocket health expenditure and debt in poor households: evidence from Cambodia. *Tropical Medicine and International Health*, *9*(2), 273–280.

World Bank, (2008). *Cambodia health pets: Public expenditure tracking survey*. Phnom Penh: World Bank.

World Bank Databank. (2012). Retrieved from http://databank.worldbank.org/ February 12, 2012.

World Bank World Development Indicators. (2012). Retrieved from http://data.worldbank.org/indicator/ February 12, 2012

World report on knowledge for better health: strengthening health systems. Geneva: World Health Organization; 2004.

WHO. (2010). WHO Western Pacific Region - Cambodia - Home. *Cambodia: Country Health Information Profiles*. Retrieved July 17, 2012, from http://www.wpro.who.int/countries/khm/4cam_pro2011_finaldraft.pdf

WHO. (2013). *Disease and injury country estimates*. Retrieved from http://www.who.int/healthinfo/global_burden_disease/estimates_country/en/index.html April 3, 2013